

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

A56.9
S035a
Copy 2

SOIL CONSERVATION SERVICE

WHAT IT IS AND WHAT IT DOES

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

JUL 31 1967

CURRENT SERIAL RECORDS

CONTENTS

| | Page |
|---------------------------------------------------------------|------|
| Integrated technical planning..... | 1 |
| Assistance to soil conservation districts..... | 2 |
| Farm and ranch conservation plans..... | 4 |
| Soil survey work..... | 6 |
| Cropland conservation..... | 6 |
| Farm woodland work..... | 7 |
| Range conservation work..... | 8 |
| Wildlife conservation work..... | 8 |
| Plant materials work..... | 9 |
| Income-producing recreation..... | 10 |
| Watershed program activities..... | 11 |
| Water resource activities and river basin investigations..... | 14 |
| Snow surveys and water-supply forecasting..... | 14 |
| Great Plains conservation program..... | 15 |
| Resource Conservation and Development projects..... | 16 |
| Conservation Needs Inventory..... | 17 |
| International assistance | 17 |
| Technical services to ACP..... | 18 |
| Defense responsibilities..... | 19 |

SOIL CONSERVATION SERVICE - WHAT IT IS AND WHAT IT DOES

The Soil Conservation Service (SCS) of the U.S. Department of Agriculture is responsible for developing and carrying out a national program of conservation and development of land and water resources.

The program includes activities authorized by several acts of Congress. The principal ones are shown in the footnote below.

The central objective of the Soil Conservation Service is an integrated system of land use and conservation treatment in harmony with the capability and needs of the land.

This is accomplished through unified planning that combines all the technologies, considers all the resources, and recognizes all the human interests and needs that apply to each area of land.

Integrated Technical Planning

To meet this objective, SCS brings together scientists and technologists from every discipline that can help to diagnose resource problems and prescribe successful treatment and use. The technical staff includes soil scientists, engineers, geologists, hydrologists, range and woodland conservationists, agronomists, biologists, economists, and others.

These diverse technologies are brought into focus on the land through a professional worker developed by SCS--the soil conservationist. He is skilled in combining the methods of the physical, biological, and social sciences and applying them to practical problems of land owners and users in real-life situations.

Principal legislative authorizations of the Soil Conservation Service: The Soil Conservation Act (Public Law 46, 74th Cong., 1935); the Omnibus Flood Control Act (Public Law 738, 74th Cong., 1936); the Flood Control Act (Public Law 534, 78th Cong., 1944); the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Cong., 1954, as amended by Public Law 1018, 84th Cong., 1956; Public Law 624, 85th Cong., 1958; Public Law 865, 85th Cong., 1958; Public Law 468, 86th Cong., 1960; Public Law 545, 86th Cong., 1960; Public Law 170, 87th Cong., 1961; Public Law 703, 87th Cong., 1962; and Public Law 337, 89th Cong., 1965); the Great Plains Conservation Program Act (Public Law 1021, 84th Cong., 1956, as amended by Public Law 793, 86th Cong., 1960); and the Food and Agriculture Act of 1962 (Public Law 703, 87th Cong.).

A second way in which SCS integrates all aspects of land use and treatment is by assisting land owners and operators and local groups to plan for each farm, ranch, watershed, or other land area as a whole--both as an economic unit and as a combination of land resources.

Equally fundamental is the concept that the several land resources--soil, water, plants, and animals--cannot be effectively used or managed separately. They are completely interdependent, and hence the land must be dealt with as a whole, acre by acre and unit by unit.

Conservation planning begins with a scientific soil survey and inventories of the other resources in the land area.

The Soil Conservation Service recognizes people as a dominant factor in each local resource situation and as the reason for conservation itself. The resources of soil, water, plants, and wildlife are significant only as they provide for the needs of people.

On the individual unit, the owner or operator makes the decisions. The SCS conservationist interprets the soil survey and resource inventory in terms of feasible alternative physical and economic systems of land use and treatment. The needs and desires of the user get full consideration in the resulting plan, for it is, in fact, his own plan.

Likewise, the conservation "tools," such as credit, cost sharing, and technical aid, cannot be separate and distinct conservation programs. They must be coordinated to fit the land user's planned conservation program.

Local people initiate and direct their own programs through their soil and water conservation districts. In each case, SCS is careful that measures recommended by its conservationists are consistent with the local district program.

The effective integration of all aspects of land use and conservation planning--of technologies, of land resources, and of the interest of people as they apply to each unit of land--is the unique feature of the work of the Soil Conservation Service.

Assistance to Soil Conservation Districts

Public Law 46 established soil and water conservation as a national policy and created the Soil Conservation Service in April 1935. Farmer participation and local control were recognized at once as essential ingredients of an on-the-farm action program. This led to the soil conservation district idea and farmers began to organize such districts under State laws in 1937.

By July 1, 1966, there were 2,995 districts in the United States, Puerto Rico, and the Virgin Islands. They included 95 percent of the Nation's

agricultural land and nearly 99 percent of the farms and ranches. Twenty-seven States were completely covered by districts. More than 18,000 local farmers and ranchers were members of the boards that govern these districts. They serve without pay, much like local school board members.

The State enabling laws provide for State soil conservation committees (boards or commissions), members of which are either named in the acts or are appointed by the Governor. As an agency of State government they guide the organization of districts and facilitate their functioning. They also serve to coordinate soil and water conservation functions of the Governors to give State level leadership to watershed-program activities.

The soil conservation district has become a permanent part of the American scene. It is the central source of help and information about soil and water conservation in nearly every community of the Nation.

Districts Self-Governed

Each district is legally responsible for soil and water conservation within its territory just as a county is responsible for roads or a school district for education. Each district is autonomous and self-governed. It has authority to enter into working agreements with other governmental agencies and with private concerns to carry out its purposes.

The Secretary of Agriculture has entered into a basic memorandum of understanding with each district, an agreement that sets forth mutual understanding of cooperation. Numerous Federal and State agencies have formal or informal working arrangements with individual districts.

The Soil Conservation Service, under a supplemental memorandum of understanding, channels most of its on-the-land assistance to land owners and operators through soil conservation districts. Under this supplemental memorandum, SCS provides the services of professional conservationists to help plan and apply conservation measures. Usually it locates a work unit in each district.

SCS Services to Individuals

Services available from SCS through every district include:

1. A detailed soil and land-capability map of the cooperator's land unit; a range site and range condition map of rangeland.
2. Local and specific information about the different safe uses and adapted crops (including grasses, trees, and wildlife) for each kind of soil.
3. Information about the conservation practices needed on each kind of soil with each of the possible systems of use.
4. Consultation service from a professional conservationist to help the individual make a basic conservation plan.

5. Technical services as needed to design, lay out, and check the construction of dams, terraces, or other structures; to decide on the varieties of plants, seeding methods and rates, and cultural practices to use in establishing grass or trees as planned; and to answer technical questions that arise in managing pastures, woodlands, or wildlife.

In addition, many soil conservation districts arrange for and offer cooperators other services and facilities to help them with their conservation work. These vary with local conditions. Some of the more common are: Equipment for earth moving, seeding, or other unusual operations, usually for hire or for rent on a cost basis; planting stock of trees or shrubs; scarce seeds at minimum cost; specialized technical assistance from woodland- or wildlife-management agencies.

Soil conservation districts, their leaders, and their voluntary State associations and national association have had a tremendous impact upon American agriculture, and upon national conservation programs.

Through them, the land use pattern has been changed on several million acres across the country. District leaders played a big role in developing the small watershed program and the Great Plains conservation program and are largely responsible for making these programs effective locally. Their support is making resource conservation and development projects effective.

In the past several years, districts have broadened their role further to include increased help to nonfarm landowners and groups within their boundaries--particularly in the rapidly developing areas in the rural-urban fringe. More and more districts are being called on to help guide urban growth to suitable areas and prevent erosion and flooding problems while construction is underway.

After all, the same careful attention is needed in protecting the soil and using it properly, whether the land use is farm crops, houses, or highways.

Reflecting their increasing responsibilities and broadened objectives, 82 percent of the Nation's 2,995 districts have entered into modernized working agreements with USDA.

Farm and Ranch Conservation Plans

Individual farm and ranch soil and water conservation plans are the backbone of assistance to soil conservation districts by the Soil Conservation Service.

SCS believes that nearly all farms or ranches need planned conservation programs, based on currently sound technology, to guide their conservation progress effectively.

SCS recognizes that soil and water conservation must be accomplished through human effort, and that it gets done only when the farmer or rancher has (1) the knowledge, (2) the desire, and (3) the means to do it.

SCS policy has always been to help district cooperators plan practical conservation progress wherein land is used within its capability and treated according to its need for the planned use.

The basic job of SCS as USDA's technical agency in soil and water conservation is to (1) show cooperators why planned conservation is needed on their land, (2) show them how to do the more difficult jobs and (3) inspire them to action.

Benefits of a Farm or Ranch Conservation Plan

The conservation plan:

1. Gives the farmer or rancher a true picture of his soil and water resources, his land's conservation needs, and his management problems.
2. Enables him to make needed land use changes and to install needed combinations of conservation practices in a step-by-step orderly manner.
3. Insures that he will install only necessary practices, and in the right order.
4. Provides the most efficient use of his time, labor, money, and equipment.
5. Provides the fullest safe use of each acre, which insures stable production costs.
6. Forms an acceptable base for loan applications.
7. Provides a sound basis for the farmer's and the public's conservation investment.

By June 30, 1966, SCS had assisted more than 1-1/2 million farmers and ranchers to prepare basic conservation plans. This represented more than one-third of all operating units and 37 percent of the agricultural land in districts. During fiscal year 1966 SCS helped more than a million cooperators in conservation planning or in applying conservation practices under the plans.

Soil Survey Work

Soil surveys provide the base for nearly every phase of the SCS program as well as of many other agencies and organizations.

SCS has leadership responsibility for the Federal part of the national cooperative soil survey. The work is carried out in cooperation with the State agricultural experiment stations and with many other State and Federal agencies.

Basic purposes of the soil survey are: (1) To determine the important characteristics of soils; (2) to classify the soils and name them according to a nationwide system; (3) to interpret the soils according to their capability for use under alternative management systems for crops, grasses, and trees and according to the properties significant to engineering; (4) to show the distribution of soils on maps of high accuracy; and (5) to publish the results including maps, the basic soil descriptions, and the basic interpretations. In addition, SCS cooperates with other agencies who prepare special maps and reports designed for immediate use by farmers and other users.

Soil scientists examine soils in the field, and mark soil boundaries on aerial photographs. They determine texture, structure, chemical composition, and other properties of the individual layers of the soil as well as total depth, slope, stoniness, degree of erosion, and any other features that influence how the soils respond to management.

During the early years of soil survey activities chief attention was given to the uses of the work by farmers. But so much information is gained in making a soil survey that it serves a great many other purposes. Soil surveys are also used by engineers, urban planners, land appraisers, and others. In recent years the engineering interpretations have become especially important to State highway departments and others. Congress has recognized the growing usefulness of soil surveys by its recent passage of Public Law 89-560. This act gives SCS authority to make soil surveys on land undergoing urban development as well as on agricultural land.

Cropland Conservation

Use and proper management of vegetation is basic to sustained profitable use of the 448 million acres of rotation crops, pastures, orchards, and vineyards and the 485 million acres in permanent pasture and range.

To help land owners and operators plan the agronomic phase of their conservation program, SCS conservationists make available the latest information about crops and their use and management. They outline the alternate cropping uses that the operator can make of his land, the varying conservation treatments, and the soil management required to safeguard the soil under different crop systems.

Land users can accomplish much of the conservation treatment with cultural and management measures that involve only the proper use and management of

plants and their residues and of water and the soil itself. Especially on the better land, a combination of continuing conservation measures will keep the soil stable and productive.

SCS agronomists are responsible for developing standards and specifications that may be used in cropping systems for about 60,000 different combinations of soil, rainfall, slope, erosion, and other physical conditions. Conservationists advise farmers on the use of one or more of 30 agronomic practices that are applicable to crop, hay, pasture, or orchard land. The practices include such measures as conservation cropping systems, improved tillage methods, efficient use of fertilizers, contouring, strip cropping, stubble mulching and other uses of crop residue, establishment and maintenance of protective vegetation in waterways and spillways, and the need for irrigation and drainage in relation to kind of crops grown.

Farm Woodland Work

SCS provides technical conservation help on private woodlands as a necessary part of conservation planning. For many thousands of small-woodland owners, this is the only encouragement or assistance they have ever had to improve and make use of their woodlands.

SCS conservationists give technical assistance in selecting land best suited for tree planting and in planning woodland practices such as tree planting, stand improvement, windbreaks, shelterbelts, gully stabilization, streambank-control plantings and similar conservation practices involving trees and shrubs.

An SCS staff of forestry-trained specialists develops guides and standards for woodland conservation and trains work-unit staffs in correlating woodland conservation practices with complete conservation farm plans. Where State forestry agencies provide landowners with specialized forestry services, SCS provides a liaison service to assure coordination but does not duplicate the services.

Because a high proportion of total forest holdings are in private ownership, conservation districts generally have included woodland conservation and forestry services as an integral part of their program. Nearly half of all trees planted on private land are on farms and ranches cooperating with conservation districts. Tree planting has nearly tripled in conservation districts since 1956. In 1966, nearly 300,000 acres of trees were planted in districts.

As this program grows, land owners and operators are requiring additional technical help in relating soils information to the job of growing wood crops on their woodlands as part of overall conservation planning. This leads to the need for "forestry services" from public and private sources in specialized aspects of woodland conservation.

Range Conservation Work

Since a third of the Nation's farm and ranch land is used for the production of native forage and produces more than 95 percent of our meat and wool, conservation work on non-Federal rangeland is a major SCS activity.

SCS helps land owners and operators:

1. Appraise the forage and livestock production potential of their land from the standpoint of soils, climate, and economic factors.
2. Develop a sound and economic plan for conservation ranching based on a scientific inventory of soil, water, and forage resources.
3. Reduce soil and water losses on rangeland and restore and improve the forage resources through sound conservation measures.
4. Maintain a permanent, stable, and productive livestock industry through proper utilization of the forage crop and protection of the soil resources.

In 30 years of working with landowners on their rangeland, SCS has made many contributions.

For example, the ability to recognize different kinds of rangeland and to determine their potential and present condition has proved to be a highly useful tool in ranch conservation planning and is a marked improvement over older methods of "range surveys."

A sound conservation program on rangeland starts with a knowledge of the soils, just as it does on land used for other purposes. SCS has developed technology to recognize and map soil differences reflected in native vegetation as a sound basis for range conservation and management. This information gives landowners the key to the potential productivity of their range. An appraisal of the condition of the range, area by area, furnishes clues to action needed for its improvement.

Wildlife Conservation Work

SCS gives consideration to wildlife values in all its activities. It encourages and helps land owners and operators in conservation districts plan positive steps to increase wildlife as a primary product of the land where appropriate and as a part of the multiple use of soil and water resources. In all activities it seeks to avoid unnecessary damage to wildlife and to favor the increase of beneficial species as an added result of resource conservation practices.

SCS has a small staff of biologists to provide technical guidance in wildlife aspects of its programs and to give needed training to field personnel. SCS is the principal agency in the Department of Agriculture dealing with wildlife

conservation problems on private land. The work is done in cooperation with State wildlife agencies.

SCS attention to wildlife is based on the following considerations:

1. Wildlife is a product of the land. Animals depend on the land for their fundamental requirements of food, shelter, and water. Upland game, waterfowl, fur animals, fish, and other kinds of wildlife can be produced as a crop by manipulating the plant cover, water, and other landscape features that make up its habitat.
2. Animal life is a natural part of the farm or ranch environment. A normal wildlife community contributes to healthy biological processes favoring plant growth and good soil tilth and stability. Abnormal populations of certain species create pest problems, as with rodents and insects. Management of wildlife populations is an important part of agricultural technology.
3. Most of the Nation's wildlife is on farms and ranches. Wildlife is a recreational resource of increasing importance. Most of it is produced on private land.

As the pressure of growing population makes increased demands on our land, the fortunes of wild creatures are more and more in the hands of farmers and ranchers.

4. Conservation farming and ranching benefit most kinds of wildlife. Land use patterns fitted to land capability create variety in vegetation. They preserve areas naturally unsuitable for cultivation in permanent cover or water.

Experience clearly demonstrates that wildlife, including waterfowl, can thrive and reproduce in an agricultural setting. Constructive cooperation by land-owners, conservation organizations, and Government agencies is assuring even greater abundance in America's rich wildlife heritage for the future.

Plant Materials Work

Since its inception SCS has been constantly searching for new plants with which to solve soil and water conservation problems. In returning eroded land to protective vegetation it was soon found that the available grasses, legumes, trees, and shrubs were not satisfactory for the kinds of jobs that had to be done. Thus, the search among native and imported plants was started and still goes on.

The first step is to assemble seed and plants from foreign accessions or plant breeders at 20 plant materials centers to determine their range of climatic and site adaptation for solving urgent conservation problems. These centers are located so as to represent the different major land resource regions throughout the country. An example of an urgent conservation problem is the

earthfill of a watershed structure that must be vegetated to prevent the fill from washing away. Another is converting cultivated land back to permanent vegetation in the Great Plains. In both cases previously unused native grasses proved more effective than domesticated ones.

Plants that have shown promise at the plant materials centers are tested on farms to determine their fitness for climate and soil under farm conditions. This is a step that is often lacking in much of the investigating work of this type. SCS has the advantage of the great number of conservation district co-operators available and willing to carry on these field tests. The testing is done under normal farm conditions with regular farm equipment. The plant is treated as a regular crop and directly compared with the accepted standard. Such testing meets the conditions of farmers who will eventually need to use the plants.

After a plant has met the requirements, the seed is increased by district co-operators and cooperating crop improvement association members. Quality seed is thus produced and sold on the market through commercial channels.

As a result of this work, nearly 100 kinds of improved conservation plants, unavailable in the past, now can be obtained on the market and put to use for a better conservation job.

The work done at the plant materials centers is in cooperation with State agencies. Seventeen of the 20 are operated by SCS, 2 are under agreement with State universities, and 1 is under agreement with a State association of soil conservation districts.

Income-Producing Recreation

Satisfying people's wants for recreation is a worthy land use, just as producing crops, forage, or wood products. It can be the primary use of certain areas, or one part of a multiple-use scheme for rural land.

From the beginning SCS assistance has included the use of land and water for fish and wildlife production as well as for crops, livestock, and timber. More than a million farm ponds and lakes, and many other conservation practices that contribute to the interest and beauty of the rural landscape, already are being used by farmers and ranchers as a basis for income-producing recreation enterprises.

The Food and Agriculture Act of 1962 authorized USDA to offer help to farmers, ranchers, and other landowners in developing recreation resources for profit. SCS has Departmental leadership in this activity, including liaison with other Federal, State, and local agencies assisting with recreational development.

Recreation offers a chance to provide additional income to farmers and associated businesses; it aids in diverting cropland to a more suitable or

profitable use; it provides an urgently needed service for urban and rural people alike; and it can help improve the economy of a community.

The kind of SCS technical help in recreation varies with the type of enterprise planned by the landowner, but generally includes:

1. Supplying information on various recreation enterprises suited to the land, and the conservation measures needed for each use.
2. Supplying information on soils and their suitability for growing trees, shrubs, and grass; for road and trail construction; for building sites for recreation facilities; for septic-tank filter fields; and for dams to impound water.
3. Appraising suitability of sites for nature and hiking or riding trails, camping and picnicking, skiing and other winter sports, firebreaks and access lanes, ponds, small lakes, wells, wildlife habitat, parking areas, playgrounds, and shooting preserves.
4. Supplying information on plants and their suitability for protective cover on playgrounds, fields, roadsides, dams, and wildlife food and cover.
5. Helping develop, improve, and manage range and pasture for livestock and big game; farm woodlands for wildlife, hiking and camping; water supplies; and fish and wildlife habitat.
6. Helping conservation districts and other local groups appraise the potential for income-producing recreation in their area and supplying cooperators with information on the usual costs and returns of the different kinds of enterprises adapted to their area.

Since 1962, more than 34,000 land owners and operators have established recreation-for-profit on their land. Of these, more than 3,200 have shifted 1.2 million acres to recreation for their primary source of income.

A growing number of small watershed projects include outdoor recreation as a purpose. As of October 1, 1966, 174 recreation developments in 148 watershed projects in 35 States had been given preliminary approval, and 114 developments had been approved for operations.

Watershed Program Activities

The U.S. Department of Agriculture's principal watershed activities on privately owned land are those authorized by the Watershed Protection and Flood Prevention Act, Public Law 566, which is administered by SCS. Nearly 800 such projects were underway on November 1, 1966.

In addition, work is continuing on 11 watershed projects comprising about 30 million acres authorized in the Flood Control Act of 1944 and is nearing

completion on some 54 pilot watersheds provided for in the USDA Appropriation Act of 1953.

These projects grew out of the early SCS watershed demonstration projects and the Flood Control Act of 1936, the first Federal law to recognize the need for runoff and waterflow retardation and soil-erosion prevention on watersheds as a principal means of flood prevention.

Work under the 1944 act began in 1946. It was soon determined that the only feasible approach was to divide the large watersheds into subwatersheds and tackle the land treatment and construction measures small watershed by small watershed.

Following World War II, the pressures for upstream-watershed management mounted. By 1953, 300 voluntary or corporate watershed associations had been organized. These organizations, in association with soil conservation districts and supported by many national organizations representing agriculture, business, labor, and wildlife, campaigned vigorously for an accelerated program of upstream-watershed management.

In 1953, Congress appropriated \$5 million with which pilot small watershed projects were started throughout the Nation under the basic SCS authority, Public Law 46, enacted in 1935.

One objective of the pilot projects was to demonstrate in representative areas of the Nation the benefits of combining soil and water conservation on the land with upstream flood-prevention structures. The other was to find out the best ways to achieve local-State-Federal teamwork in planning and carrying out watershed protection and development.

Under this authority 50 pilot projects have been completed, and 2 are scheduled for completion in fiscal year 1967.

Early Work Points Way

The work in subwatersheds of the 11 authorized projects and the pilot projects has been successful beyond its flood prevention and watershed protection benefits. It also has shown how to handle flood waters on small watersheds effectively and at low cost. It has served as a training ground for technical personnel. It has served as a proving ground for techniques that are now being applied in the Public Law 566 program.

Few conservation acts have created as much popular interest and activity in such a short time as has Public Law 566. By November 1, 1966, local organizations had applied for USDA assistance under its provisions in some 2,559 watersheds covering more than 186 million acres in 49 States and Puerto Rico. To provide more effective State and local participation in this program, the legislatures of 48 States have enacted more than 340 pieces of related legislation since 1955.

By November 1, 1966, SCS had provided planning assistance in 1,259 watersheds containing more than 87 million acres. Of these, 799 projects containing more than 46 million acres had been authorized for operations. Works of improvement had been completed on 164 projects.

Gap In Resource Programs Filled

The popularity and support of the Public Law 566 program throughout the Nation indicates that it truly meets a long-felt need for organized action to fill a gap in national resource conservation and development programs. Prior legislation had provided, on the one hand, for programs of public land conservation and for technical, educational, cost-sharing, and credit assistance to individual private land owners and operators. On the other hand, the Reclamation, Flood Control, TVA, and other Acts had authorized large programs of Federal development of downstream river resources, including large irrigation schemes, hydropower development, flood control, navigation and, secondarily, fish and wildlife development, recreation, and municipal or industrial water supply.

The gap left by these programs occurs in the small watersheds of less than 250,000 acres. The small watersheds have many of the same needs for land and water management that exist on the larger rivers. More than half of the flood damage in the Nation occurs in these upstream watersheds. A large percentage of the irrigated farms of the West are within or get their water supply from small watersheds. Thousands of towns and small cities use surface water supplies from such watersheds. Fish and wildlife and recreational development must be greatly accelerated on small watersheds if the need for such developments is to be brought within reasonable distance and cost to the average citizen. Many of the problems of erosion, as along water courses, or of phreatophyte control can be effectively solved only by public action programs in small watersheds. In fact, of all water-resource developments only navigation and hydropower seem to be confined to, or even predominant on, our larger rivers.

Principles of the Program

The Public Law 566 program was a response to these needs. Amendments to the law have broadened the scope of assistance to include recreational, fish and wildlife development, and municipal water supply. The program's fundamental principles are (1) local initiative and responsibility, (2) Federal technical and financial aid, and (3) State review and approval of local proposals with the wide-open opportunity for State financial and other assistance.

Small watershed projects offer opportunities to small cities, towns, and rural areas throughout the Nation in stimulating economic growth. Where projects have been developed for multiple purposes, both urban and rural areas have benefited. Freedom from floods, erosion, and siltation have reduced the risks in farming, lowered maintenance costs on roads and bridges, and freed urban communities from the threat of costly damages.

Water impounded in upstream reservoirs offers opportunities to develop fishing, boating, hunting, swimming, picnicking, camping, and other recreation facilities. The same reservoirs can supply water for irrigation and for municipal and industrial uses to meet growing needs for water to attract new industries and allow for future expansion of existing industries.

Probably no investment has a more immediate and positive effect on the economy of a community than a watershed project. The projects often act as a catalyst to a whole rural development endeavor--family farm improvement, higher living standard, soil and water conservation, water resources control, industrial development, commercial expansion, improvement of community facilities and recreation. They all fit together like a well-planned, well-made building.

Water Resource Activities and River Basin Investigations

Activities of the U.S. Department of Agriculture in the field of water resources that involve interagency cooperation and cooperative work with State governments are assigned to SCS.

Public Law 566 provides broad authority to cooperate with State governments and with other Federal agencies in river basin planning, surveys, and investigation.

River basin surveys are undertaken at the request of the cooperating State or Federal agencies. They are extremely valuable in maintaining coordination between the upstream watershed aspects for which USDA has responsibility and the downstream problems of water resource use and development.

Cooperative river basin surveys and investigations, although authorized by Public Law 566, are not directed specifically toward developing watershed projects. They provide a basis for coordinating broad resource developments. As a result of these studies, however, watershed projects are frequently found feasible and later are planned.

Snow Surveys and Water-Supply Forecasting

Most of the water for the West--for agriculture, industries, cities, power--comes from the snow that falls in the mountains.

How much water will be available is determined by snow surveyors who measure the water content of the mountain snowpack in the winter and estimate the acre-feet of runoff from each mountain watershed.

Several times each winter more than 1,200 snow surveyors measure the snowpack on some 1,400 snow courses in remote, rugged mountain areas of the West and British Columbia. They cover about 71,000 miles on skis, snowshoes, and special oversnow machines in the roughest kind of country under hazardous climatic and physical conditions.

Data they collect are translated into a water-supply forecast issued by SCS, usually about mid-April. Water users of the West base their plans for the year's operations on this forecast. Interim reports are released from time to time during the winter.

SCS has Departmental leadership for conducting the snow surveys in cooperation with other Federal, State, and private agencies.

Great Plains Conservation Program

In the Great Plains, an area of severe climatic hazards, various programs have been carried out in the past to meet emergency situations. These have been carried out at a relatively high cost. The Great Plains conservation program, in operation since 1956 under Public Law 1021, is designed to bring about a more nearly permanent solution to the problem resulting from drought and the cultivation of low-grade cropland.

It is a long-term soil and water conservation program aimed at bringing about needed land use adjustments and the application of enduring conservation practices.

This program was recommended by the Great Plains Agricultural Council, by farm organizations, soil conservation districts, and others. Responsibility for administration was assigned to SCS.

Local leadership from conservation districts, without cost to the Federal Government, is largely responsible for the progress of this program.

Technical assistance and cost sharing are integrated in carrying out conservation plans over a period not to exceed 10 years. Cost shares are specifically limited to installing permanent nonrecurring practices and are obligated at the time the plan is developed and the contract signed. This guarantees the availability of funds to apply the needed practices on schedule and to make any needed changes in land use.

Farmers and ranchers maintain all practices. In addition, they have been willing and able to carry out, as a condition of contract fulfillment, annual recurring practices such as stubble-mulch farming and deferred and rotation grazing, without Federal cost shares.

Converting land poorly suited for cultivated crop production to grassland and the reseeding of depleted rangeland have top priority in this program. By July 1, 1966, more than one-fourth of the 4.7 million acres of cropland in Great Plains conservation program plans had been contracted for converting to grass.

Resource Conservation and Development Projects

In bringing about better economic opportunities in rural America, improvement and sound use of natural resources are an important factor. Speeding up resource programs in broad areas as a base for economic development is the aim of Resource Conservation and Development (RC&D) projects authorized by the Food and Agriculture Act of 1962.

SCS has responsibility for helping local sponsors of these projects and coordinating the assistance of other Federal and State agencies in meeting project objectives.

By November 1966, 20 RC&D projects in 21 States had been approved for USDA operations assistance, and another 6 approved for planning help. A total of about 50 applications have been received. In the first 10 projects, more than 600 project measures are completed or underway. The measures are expected to provide several hundred new jobs when they are in operation.

Each project has its own unique features, but most projects include these goals:

1. Develop water resources for recreation, wildlife, flood prevention, and agricultural, municipal, or industrial use.
2. Complete a soil survey of the area.
3. Speed up conservation planning and establishment on individual land units.
4. Convert poorly suited cropland to grass, trees, wildlife, and recreation use.
5. Improve recreation facilities, including historical and scenic attractions.
6. Encourage new industries to locate in the area and to process products of the area.
7. Improve markets for crop and livestock products.

RC&D project areas generally are larger than a single county, and range in size from 1/4 to 3 million acres. Each must be large enough to encompass the resources and related developments that affect its area, but small enough for effective local leadership and speedy development of a project plan.

Local sponsors of RC&D projects have included conservation districts, county governing bodies, towns, local and State agencies, irrigation districts, public development corporations, and others. After their application for RC&D project help is approved by the Governor of the State, it is submitted to USDA for planning assistance. When this is authorized, SCS names a project coordinator to help sponsors review their opportunities and develop a comprehensive plan for the project area. After plan approval, USDA provides technical and financial help in carrying out measures called for in the plan.

Conservation Needs Inventory

The U.S. Department of Agriculture and cooperating State and local agencies completed a National Inventory of Soil and Water Conservation Needs in 1962. It is now being updated; the revision is scheduled for completion in 1968.

The Inventory provides the most thorough and objective picture we have ever had of the Nation's privately owned land and water resources.

Published results of the Inventory make available the following kinds of information for every county, watershed, and land-resource area, by State and National summaries:

1. Basic data on kind of soil, slope, erosion, and land use, with interpretation in terms of land capability.
2. Current (1958-59) and expected (1975) land use by land-capability subclass.
3. Acreage needing conservation treatment in each land use (cropland, grazing land, woodland, and other) by dominant kinds of problems significant for each land use.
4. Delineation of all small watersheds (250,000 acres or less) and number and area needing project action to deal with water problems.

The Inventory was initiated in response to a growing demand, both from inside USDA and from without, for this kind of information, which was not available from any source.

To meet this need, USDA in 1956 set up an interagency committee to make the Inventory and keep it current, and assigned responsibility for leadership to SCS. Similar committees were established in every State and county.

A number of research councils, institutes, universities, chambers of commerce, and river-basin-study organizations and other public agencies are making use of the Inventory data. In addition, many commercial concerns, including fertilizer, farm equipment, irrigation, seed, utility, and other companies concerned with agriculture, are asking for information about production potentials and trends in land use.

International Assistance

SCS experience and technical skills have helped advance resource conservation and development in other countries for many years. SCS has provided technical training in the United States to about 400 visitors from developing countries each year. And many SCS employees have transferred to the Agency for International Development (AID) and its predecessor over the years to take foreign assignments of up to two years or more.

SCS now has direct responsibility for cooperating with AID, FAO, and the United Nations--under contract arrangements--in providing technical conservation assistance around the world. SCS conservationists work with officials and technicians of a nation in organizing conservation programs and in training them to work with local people in applying conservation measures.

Through their experiences in many lands and the exchange of ideas, there is being built up a corps of international conservation workers competent to deal with the varied and complex resource problems of the free world. During fiscal year 1966, 30 SCS technicians were in 17 foreign countries on short-term assignments for USDA, and 27 technicians were on longer assignments in 6 countries.

Technical Services to ACP

Through the Agricultural Conservation Program, USDA shares with farmers the cost of applying certain soil and water conservation measures. At the national level, ACP is administered by the Agricultural Stabilization and Conservation Service. In the States and counties this responsibility is assigned to Agricultural Stabilization and Conservation Committees. County committees accept applications from farmers for cost sharing and issue payments to farmers after conservation practices have been satisfactorily applied.

SCS is assigned responsibility to (1) help formulate the annual ACP at the National, State, and county levels, and (2) carry out certain technical phases of about 20 practices offered in the ACP. This technical responsibility includes:

1. Determining whether the practice is needed and practical on the farm or ranch.
2. Helping in site selection, other preliminary work, and layout of the practice.
3. Supervising the installation.
4. Checking and certifying performance of the practice.

Farmer requests for ACP assistance on conservation practices for which SCS has technical responsibility are referred to the SCS work unit by the county ASC committee. During recent years about 400,000 such referrals have been made each year.

Only when the SCS man certifies that the conservation practice has been completed satisfactorily does the county ASC committee issue cost-sharing payments to the farmer.

SCS technical assistance to ACP is financed through transfer to SCS of up to 5 percent of the annual ACP funds allotted for use in counties.

Defense Responsibilities

SCS has preemergency and emergency responsibilities relating to:

1. Radiological monitoring of agricultural land and water, and farm commodities stored or harvestable on farms and ranches and at bin sites; and advising on livestock protection. SCS now has more than 3,000 operational monitoring stations, with more than 6,500 trained monitors--providing monitoring capability for almost all rural counties in the Nation.
2. Helping land owners and operators select land for agricultural production and plan proper use, conservation, disposal, and control of water to assure adequate usable water and protect against floods.

This includes determining:

- (a) Land best adapted to production of needed crops;
- (b) New land that may be brought into cultivation;
- (c) Time required before contaminated land is safe to use;
- (d) Contaminated land that may be used for special crops; and
- (e) Potential flood hazards and need for emergency flood prevention.

